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Feature Article - Foreign Ownership Characteristics of Information Technology Businesses in Australia

SUMMARY

As part of an initiative to expand the data available on economic globalisation issues, the ABS has embarked on a series of studies of the economic activity of majority foreign-owned businesses in Australia.

The most recent study examines the foreign ownership characteristics of specialist Information Technology (IT) businesses in 2000-2001 and updates a previous study of IT businesses for 1998-1999. Majority foreign-owned businesses continued the dominance of the IT components of the wholesale industry that was identified in the 1998-1999 study and have significantly increased activity in the IT components of the manufacturing industry to the extent that by 2000-2001, they dominated that industry also. In the computer services industry, both Australian-owned and majority foreign-owned businesses have increased economic activity by roughly the same amount so that, as with the 1998-1999 study, majority foreign-owned businesses provided a similar level of employment to Australian-owned businesses, but they accounted for more than half the income.

As with the 1998-1999 study, majority USA-owned businesses had the largest economic activity of foreign owned businesses to the extent that they rivalled Australian-owned businesses in terms of employment and exceeded Australian-owned businesses in terms of income.

INTRODUCTION

Economic globalisation is not a new phenomenon: Countries have conducted trade for centuries. However, the intensity of international activity and interdependency of economies gathered pace rapidly over the 1980s and 90s, and has given rise to economic, social and environmental issues which need to be taken into account by policy makers and economic analysts.
The OECD draft **Manual on Economic Globalisation Indicators** outlines three sets of indicators necessary to measure economic globalisation:

- Indicators relating to trade.
- Indicators of foreign direct investment and the structure and activities of multinational firms.
- Indicators of the international dissemination of technology.

The ABS has for some time compiled traditional economic indicators for foreign trade and foreign direct investment. While these data give some structural information, the ABS has not regularly compiled data for the economic activity of multinational firms, nor the international dissemination of technology. The ABS has therefore been producing a series of case studies deriving activity

data for foreign-owned businesses and indicators of technology dissemination by blending data from a number of sources. Studies have already been undertaken of new capital expenditure by majority foreign-owned businesses, the economic activity of majority foreign-owned businesses in the mining industry, the economic activity of majority foreign-owned businesses specialising in the information technology industry, and research and experimental development activity of majority foreign-owned businesses[1].

This study addresses the economic activity of multinational firms in the IT industry by updating the 1998-1999 study in respect of the 2000-2001 financial year.

DATA SOURCES

This study uses data collected by the ABS in the 2000-2001 Information Technology Survey, published in **Information Technology, Australia 2000-2001** (ABS cat. no. 8126.0). Businesses in that survey were linked to the foreign ownership characteristics from the ABS Survey of International Investment for those businesses included in both surveys and in scope of this study. For other businesses, a number of other sources were used, with most ownership data compiled from extensive internet searches.

INFORMATION TECHNOLOGY AND TELECOMMUNICATIONS SPECIALISTS

The Information Technology Survey covers the main industries involved in the production and distribution of information technology and telecommunications (IT and T) goods and services. Within these industries, there is a subset of businesses that specialise in IT and T. These businesses are the main focus of the survey, and therefore the main focus of this study.

Businesses are classified as IT and T Specialists if their IT and T income is 50% or more of the total income of the business.

SCOPE OF THIS STUDY

While the Information Technology Survey includes the Telecommunications sector, this study excludes that sector because the split of data between Australian and foreign-owned would have breached ABS confidentiality requirements.

For businesses in the IT sector, their predominant economic activity relates to IT goods and services, however minor activity relating to other goods and services may also take place. Where this activity relates to telecommunications, it has been kept in the calculation of IT income for this study.

RESULTS

The 2000-2001 study shows that domestic (ie. Australian resident) IT specialists experienced a period of strong growth between 1998-1999 and 2000-2001. Employment increased by 30% (to 161,246) and IT income grew by 33% (to $43.9b). In terms of employment, the growth was dominated by an increase in the computer services industry (up 32% to 97,565), supported by significant increases in the wholesale trade of IT goods industry (up 30% to 50,983) and the IT manufacturing industry (up 17% to 12,699). In terms of IT income, all industries showed strong growth, with the wholesale trade of IT goods industry experiencing the largest increase (up 33% to $26.3b), followed by the computer services industry (up 35% to $13.9b) and the IT

manufacturing industry (up 25% to $3.7b).

In both the 1998-1999 and 2000-2001 studies, foreign-owned businesses made a strong contribution to the economic activity of the domestic IT businesses (see Table 1). This contribution kept pace with the strong growth experienced in the IT industry during that time, to the extent that the contribution of foreign-owned businesses to the activity of the domestic IT industry remained about the same. As with the 1998-1999 study, the key feature of the 2000-2001 study is the dominance of foreign-owned businesses in IT income, total income and wages and salaries. In 2000-2001, foreign-owned businesses employed nearly 72,000 (44% of all employment in IT specialist businesses), had IT income of $28.2b (64%), total income from all sources of $29.8b (65%) and paid wages and salaries of $5.3b (56%). By comparison, businesses which were positively identified as Australian-owned provided employment of over 49,000 (31%), IT income of $11.0b (25%), total income of $11.4b (25%) and wages and salaries of $2.5b (27%).

Economic activity was also undertaken by businesses for which we were not able to determine ownership characteristics from available sources (25% of employment, 11% of IT income, 11% of total income and 17% of wages and salaries). These businesses tended to be smaller in size and we expect most of them to be majority Australian-owned. The relative dominance of foreign-owned IT businesses would be reduced, particularly in respect of employment, if the ownership of "unknowns" was predominantly Australian. This is discussed further in the Appendix: Analysis of Businesses with Unknown Ownership.

TABLE 1: BROAD INDICATORS FOR IT SPECIALIST BUSINESSES BY OWNERSHIP GROUP

	EMPLOYMENT AT END JUNE		IT INCOME		TOTAL INCOME		WAGES AND SALARIES		IT Income per person employed	Average wage/ salary per person employed
	no.	%	$m	%	$m	%	$m	%	$m	$m
1998-1999										
Australian	35,030	28	8,632	26	9,031	25	1,678	26	247	48
Foreign	54,679	44	20,149	61	22,823	63	3,555	55	368	65
Unknown	34,409	28	4,220	13	4,328	12	1,273	20	125	38
Total	**124,118**		**33,001**		**36,182**		**6,506**		**267**	**53**
2000-2001										
Australian	49,192	31	11,018	25	11,412	25	2,522	27	224	51
Foreign	71,740	44	28,199	64	29,760	65	5,257	56	393	73
Unknown	40,314	25	4,723	11	4,841	11	1,631	17	117	40
Total	**161,246**		**43,940**		**46,013**		**9,410**		**273**	**58**

IT income per person employed in foreign-owned businesses is higher than in Australian-owned businesses ($393,000 compared with $224,000), with the average wage/salary per person employed also following this pattern ($73,000 compared with $51,000)[2]. This result is consistent with the 1998-1999 study and a recent OECD study that found that foreign controlled manufacturing firms tended to pay their workers more (**OECD Observer** No. 220, April 2000).

TABLE 2: BROAD INDICATORS FOR IT SPECIALISTS BY BROAD INDUSTRY BY OWNERSHIP GROUP

	EMPLOYMENT AT END JUNE		IT INCOME		TOTAL INCOME		WAGES AND SALARIES		IT Income per person employed	Average wage/ salary per person employed
	no.	%	$m	%	$m	%	$m	%	$m	$m
MANUFACTURING 1998-1999										
Australian	4,339	40	1,313	45	1,375	41	188	38	301	43
Foreign	4,667	43	1,291	44	1,687	50	247	50	277	53
Unknown	1,814	17	313	11	325	10	63	13	173	35
Total	**10,820**		**2,917**		**3,387**		**498**		**269**	**46**
MANUFACTURING 2000-2001										
Australian	3,384	27	954	26	1,010	24	160	21	282	47
Foreign	7,452	59	2,452	67	2,871	69	519	69	329	70
Unknown	1,862	15	249	7	272	7	70	9	134	37
Total	**12,699**		**3,655**		**4,153**		**749**		**288**	**59**
WHOLESALE TRADE 1998-1999										
Australian	9,085	23	4,475	23	4,733	21	392	17	488	43
Foreign	25,789	66	13,422	68	15,625	70	1,719	75	518	66
Unknown	4,353	11	1,888*	10	1,927*	9	179	8	432	41
Total	**39,227**		**19,785**		**22,285**		**2,289**		**501**	**58**
WHOLESALE TRADE 2000-2001										
Australian	15,805	31	6,284	24	6,394	23	705	23	398	45
Foreign	27,541	54	18,167	69	18,995	70	2,092	69	660	76
Unknown	7,636	15	1,893	7	1,934	7	254	8	248	33
Total	**50,983**		**26,344**		**27,323**		**3,050**		**517**	**60**
COMPUTER SERVICES 1998-1999										
Australian	21,606	29	2,844	28	2,923	28	1,098	30	133	51
Foreign	24,223	33	5,436	53	5,511	52	1,589	43	225	66
Unknown	28,242	38	2,019	20	2,075	20	1,031	28	73	37
Total	**74,072**		**10,299**		**10,509**		**3,718**		**141**	**51**
COMPUTER SERVICES 2000-2001										
Australian	30,003	31	3,780	27	4,008	28	1,656	30	126	55
Foreign	36,747	38	7,580	54	7,895	54	2,647	47	206	72
Unknown	30,815	32	2,581	19	2,635	18	1,307	23	84	42
Total	**97,565**		**13,941**		**14,538**		**5,610**		**143**	**58**

* Relative Standard Error (RSE) for this cell is between 25% and 50%.

Between 1998-1999 and 2000-2001, foreign-owned IT businesses experienced a significant increase in their relative contribution to the IT manufacturing industry (see Table 2). In 2000-2001, foreign-owned businesses in manufacturing provided 59% of the employment (up from 40% in 1998-1999), accounted for 67% of IT income (up from 44% in 1998-1999), 69% of total income (up from 50% in 1998-1999) and paid 69% of wages and salaries (up from 50% in 1998-1999). For the wholesale trade and computer services industries, growth in the activity of foreign-owned businesses kept pace with industry growth, with the relative contribution of foreign-owned businesses in 2000-2001 remaining similar to their 1998-1999 levels. The one

exception to this is the employment provided by foreign-owned businesses in the wholesale trade industry, where the number of persons employed by foreign-owned businesses remained relatively unchanged between 1998-1999 and 2000-2001, while Australian-owned and unknown businesses increased their employment levels by 74% and 75% respectively.

Table 3 presents indicators for countries with significant investment in the domestic IT industry. Although approximately a quarter could not be classified to a country (see Appendix) it shows that in both 1998-1999 and 2000-2001, businesses with majority ownership from the USA and businesses which were specifically identified as Australian-owned were the most significant providers of employment (47,000 and 49,000 respectively for 2000-2001). Businesses with majority ownership from the USA derived more IT income than businesses which were specifically identified as Australian-owned ($19.0b and $11.0b respectively for 2000-2001).

TABLE 3: BROAD INDICATORS FOR IT SPECIALISTS BY COUNTRY OF MAJORITY OWNERSHIP

	EMPLOYMENT AT END JUNE		IT INCOME		TOTAL INCOME		WAGES AND SALARIES		IT Income per person employed	Average wage/ salary per person employed
	no.	%	$m	%	$m	%	$m	%	$m	$m
1998-1999										
Australia	35,030	28	8,632	26	9,031	25	1,678	26	247	48
USA	32,320	26	10,651	32	11,731	32	2,193	34	329	68
European Union of which	10,190	8	4,753	14	5,369	15	667	10	467	65
UK	2,450	2	638	2	818	2	155	2	260	63
Germany	1,790	1	627*	2	805	2	137*	2	350	77
Netherlands	1,871	2	1,667*	5	1,870*	5	103	2	891	55
Japan	8,377	7	3,824*	12	4,416*	12	483	7	454*	57
Other Foreign Countries	3,792	3	922	3	1,306	4	212	3	243	56
Unknown	34,409	28	4,220	13	4,328	12	1,273	20	125	38
Total	124,118		33,001		36,182		6,506		267	53
2000-2001										
Australia	49,192	31	11,018	25	11,412	25	2,522	27	224	51
USA	46,881	29	18,973	43	19,532	42	3,452	37	405	74
European Union of which	15,319	10	5,286	12	5,919	13	1,099	12	345	72
UK	5,919	4	1,028	2	1,186	3	403	4	174	68
France	2,972	2	1,193	3	1,211	3	206	2	402	69
Germany	2,267	1	698	2	1,079	2	183	2	308	81
Japan	4,871	3	2,390	5	2,647	6	367	4	491	75
Other Foreign Countries	4,669	3	1,551	4	1,663	4	340	4	332	73
Unknown	40,314	25	4,723	11	4,841	11	1,631	17	117	40
Total	161,246		43,940		46,013		9,410		273	58

* Relative Standard Error (RSE) for this cell is between 25% and 50%.

Businesses with majority ownership from the European Union made a significant contribution across the board in both 1998-1999 and 2000-2001, providing employment of over 15,000 in 2000-2001 (10% of all employment) and IT income of $5.3b (12%). Within the EU, the contribution of businesses with majority ownership from the United Kingdom increased significantly between 1998-1999 and 2000-2001, with employment rising from 2,000 to 6,000 and IT income rising from $0.6b to $1.0b. Japan remained the most significant contributor to the estimates from the Asian region, however the contribution of businesses with Japanese majority foreign-ownership fell significantly between 1998-1999 and 2000-2001, with employment falling from over 8,000 to less than 5,000 and IT income falling from $3.8b to $2.4b.

OTHER STUDIES

Several globalisation case studies were undertaken prior to this exercise, to examine the foreign ownership characteristics of businesses in other areas of interest.

The study of businesses in the mining industry in 1997-1998 showed that foreign-owned businesses made a larger contribution to industry turnover than Australian-owned businesses (56% and 43% respectively), but a lower contribution to industry employment (40% and 59% respectively) and capital expenditure (34% and 59% respectively). Foreign-owned and Australian-owned businesses contributed similar amounts to expenditure on wages and salaries by the mining industry (50% and 49%).

A study of the ownership of businesses undertaking capital expenditure for the 1998-1999 financial year showed the lower contribution of foreign-owned businesses to capital expenditure was not restricted to the mining industry, with the capital expenditure by foreign-owned businesses across all industries estimated at $11.5b (26%) and capital expenditure by Australian-owned businesses estimated at $27.9b (62%).

A study of research and experimental development expenditure for the 1999-2000 financial year found that majority foreign-owned businesses spent almost as much on R&D as Australian-owned businesses (42% and 58% respectively). Majority foreign-owned businesses dominated R&D activity by wholesale and retail businesses, both in terms of R&D expenditure and human resources devoted to R&D. The manufacturing industry contributed more than any other to total R&D activity, and this contribution was shared evenly between foreign-owned and Australian-owned businesses.

A further study is underway to investigate the foreign ownership characteristics of domestic businesses across all industries in respect of the 2000-2001 financial year.

FURTHER INFORMATION

For more information about the foreign ownership of IT specialist businesses, contact Glen Malam on 02 6252 5040 or email <glen.malam@abs.gov.au>

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APPENDIX - ANALYSIS OF BUSINESSES WITH UNKNOWN OWNERSHIP

When conducting this study, it was not possible to establish the ownership of a significant number of units, as shown in the preceding tables. In some cases the contribution of these unknown units was quite large, but insufficient to challenge the conclusions reached in this paper.

An analysis of these unknown units, classified by employment size of the business, is provided in Tables 4 (employment) and 5 (IT income). Employment for those businesses with unknown ownership is dominated by businesses in the computer services industry (76% of employment for unknown businesses), with unknown businesses in this industry contributing 55% of total unknown business income. Businesses with 0-4 employees in the computer services industry accounted for 55% of total unknown employment, and 38% of total unknown IT income.

TABLE 4: ANALYSIS OF UNKNOWN UNITS - ESTIMATED EMPLOYMENT OF UNKNOWN BUSINESSES

Detailed Industry (ANZSIC)	EMPLOYMENT SIZE							
	0 - 4		5 - 19		20+		Total	
	no.	% of all unknowns	no.	% of all unknowns	no.	% of all unknowns	no.	% of all unknowns
Manufacturing	596	1	927	2	339	1	1,862	5
Wholesaling	3,205	8	3,988	10	444	1	7,637	19
Computer Services	22,001	55	6,838	17	1,976	5	30,815	76
Total	**25,802**	**64**	**11,753**	**29**	**2,759**	**7**	**40,314**	**100**

TABLE 5: ANALYSIS OF UNKNOWN UNITS - ESTIMATED IT INCOME OF UNKNOWN BUSINESSES

Detailed Industry (ANZSIC)	EMPLOYMENT SIZE							
	0 - 4		5 - 19		20+		Total	
	no.	% of all unknowns	no.	% of all unknowns	no.	% of all unknowns	no.	% of all unknowns
Manufacturing	88	2	129	3	32	1	249	5
Wholesaling	833	18	979	21	81	2	1,893	40
Computer Services	1,787	38	595	13	198	4	2,581	55
Total	**2,708**	**57**	**1,703**	**36**	**311**	**7**	**4,723**	**100**

Considering the nature of the computer services industry, it is thought unlikely that businesses with 4 or fewer employees would have majority foreign-ownership. Accordingly, the data were recalculated assuming that all unknown computer services businesses with 4 or fewer employees were majority Australian-owned. The results are presented in Table 6. The broad conclusions from Table 1 generally remain valid: Foreign-owned businesses would still dominate the economic activity of the IT industry in terms of IT income, total income and wages and salaries, but Australian majority owned businesses would then employ approximately the same number of people as foreign-owned businesses.

TABLE 6: ANALYSIS OF UNKNOWN UNITS - BROAD INDICATORS FOR IT and T SPECIALISTS IF COMPUTER SERVICES BUSINESSES WITH 4 OR FEWER EMPLOYEES WITH UNKNOWN OWNERSHIP CHARACTERISTICS ARE ASSUMED TO BE AUSTRALIAN OWNED

	EMPLOYMENT AT END JUNE		IT INCOME		TOTAL INCOME		WAGES AND SALARIES		IT Income per person employed	Average wage/ salary per person employed
	no.	%	$m	%	$m	%	$m	%	$m	$m
					2000-2001					
Australian	71,193	44	12,805	29	13,213	29	3,439	37	180	48
Foreign	71,740	44	28,199	64	29,760	65	5,257	56	393	73
Unknown	18,313	11	2,936	7	3,040	7	714	8	160	39
Total	**161,246**		**43,940**		**46,013**		**9,410**		**273**	**58**

ENDNOTES

1. Hereafter the word ‘majority’ is omitted but it is implied
2. This crude comparison ignores any compositional difference between the two populations in terms of the distribution of businesses by industry, size or other characteristics.

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